

# ACTIVITIES IN SCIENCE, ENGINEERING, AND MATHEMATICS FOR PERSONS WITH DISABILITIES

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## *Program Solicitation, Information, and Guidelines*

DIRECTORATE FOR EDUCATION AND HUMAN RESOURCES  
(EHR)

PROPOSAL DEADLINES: Preliminary Proposals - November 2 of Current Year  
Formal Proposals - February 1 of Following Year

- Demonstration Projects
- Research and Development Projects
- Information Dissemination Projects



NATIONAL SCIENCE FOUNDATION

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## INTRODUCTION

The National Science Foundation (NSF) has a mandate to ensure the vitality of the United States in the scientific and technical enterprise. The goals of the Division of Human Resource Development (HRD), located in the Directorate for Education and Human Resources (EHR), are directed toward this end by promoting activities to increase the participation of traditionally underrepresented communities in science, mathematics, engineering, and technology (SMET) education and careers.

Within HRD, the Program for Persons with Disabilities (PPD) is committed to bringing about needed change in academic and professional climates, increasing the awareness and recognition of the needs and capabilities of students with disabilities, promoting the accessibility and appropriateness of instructional materials, media, and educational technologies, and increasing the availability of student enrichment resources including mentoring activities. In short, efforts are dedicated to changing the factors wherein neglect, paucity, and indirection historically have stifled the early interest in science and mathematics shown by students with disabilities, and that impeded the advancement of these individuals as they prepare themselves for careers in SMET fields.

Organizations eligible to submit proposals to promote these goals include universities and colleges; nonprofit, nonacademic institutions (including museums, professional associations, and community-based organizations); state and local governments (including school districts); and for-profit research institutions and businesses. The Foundation encourages proposals that serve to build or strengthen alliances among eligible organizations.

Although the Programs in HRD focus primarily on underrepresented communities, all NSF programs encourage proposals with a similar focus. See *Guide to Programs* (NSF 97-150) for descriptions of all NSF funding opportunities.

## PROJECT CATEGORIES

### *Demonstration Projects*

The Foundation supports the design and conduct of special Demonstration Projects that design, implement and evaluate innovative intervention strategies. The goal of these strategies should be to reduce the barriers that inhibit the interest, participation, retention, and advancement in SMET education for persons with disabilities.

Prospective proposers are strongly encouraged to give specific attention in the design of projects to the critical issues that hinder the inclusion and participation in SMET education of students with disabilities, and the successful retention of these students in pursuit of SMET careers. These issues include, but are not limited to:

- access to appropriate mathematics and science instructional materials, media, educational technologies, and laboratory experiences;
- availability of science enrichment activities through intra- and extracurricular hands-on SMET experiences;
- interaction with role models and mentors;
- inclusion and participation in elementary, secondary and undergraduate level mathematics and science courses;
- attitudes of pre-college teachers, counselors, and higher education faculty; and
- career guidance.

Projects in this category should strive to demonstrate the effectiveness of strategies that improve participation of students with disabilities in SMET education. Examples of activities that are appropriate under this competition include, but are not limited to:

- examination of effective methods for teaching science or mathematics so that students with disabilities perform competitively with other students on their education level;
- adaptation of existing science or mathematics curricula so that they are appropriate for all students including those with disabilities (to be conducted collaboratively with the publisher to insure rapid dissemination of the new products);
- work to overcome stereotyping of persons with disabilities among parents, teachers, peers, and co-workers;
- provision of science enrichment activities for students with disabilities; and
- exploration of the maximum use of scientists with disabilities as mentors to improve the interest, performance, and retention of students with disabilities in SMET education.

### **Award Size and Duration**

Demonstration Projects may be up to three years in length. Requests for one or two years are also acceptable. The Foundation recognizes that one year may not be sufficient to conduct a project, complete necessary analysis, and prepare reports for dissemination. A budget request of up to \$150,000 per year is allowed.

### **Deadlines**

Brief preliminary proposals are required (please see page 3 for details). Prospective proposers who do not submit a preliminary proposal are not eligible to submit in the formal competition. Preliminary proposals have a deadline of November 2. Formal proposal packages must be received at NSF no later than February 1 of the following year.

## ***Research and Development Projects***

Physical disabilities may limit access to facilities, laboratories and operation of instrumentation. Similarly, sensory and cognitive disabilities may limit access to the customary presentation of pictorial, textual, and graphical information and data. For people with physical disabilities, appropriate technology often can provide access to the operation of instrumentation. People with sensory or cognitive disabilities may use appropriate technology to access information. Technology has been particularly important in providing access to scientific laboratories and information for students with disabilities. Students with visual or cognitive disabilities may use technology to provide access to the presentation of scientific information and higher level mathematics. Auditory presentations of information create a barrier to learning for students who are deaf or hard-of-hearing and for individuals with some forms of cognitive disabilities. Proposals designed to provide improved learning opportunities in SMET education for students with disabilities through the development of innovative technology are accepted by the NSF Program for Persons with Disabilities. Proposals in this competition must include the following components:

- identification of a task or information that cannot be performed or perceived by students who have a disability;
- description of alternative means by which the identified problem can be resolved;
- methods by which the alternative technique or technology can be produced and evaluated for its reliability;
- documentation of the participation of individuals with expertise in essential disciplines (i.e., technical, science education, special needs of students with disabilities);
- description of the disability to be addressed and assurance that students with the disability will be active participants during all phases of the research, development and evaluation processes; and
- means by which the innovative technique or technology will be disseminated widely.

## **Award Size and Duration**

Research and Development Projects may be up to three years in length. Requests for one or two years are also allowed. The Foundation recognizes that one year may not be sufficient to complete the proposed research, development, evaluation and dissemination activities. A budget of up to \$200,000 per year is acceptable.

## **Deadlines**

Brief, informal, preliminary proposals are required (please see page 3 for details). Prospective proposers who do not submit a preliminary proposal are not eligible to submit in the formal

competition. Preliminary proposals have a deadline of November 2. Formal proposal packages must be received at NSF no later than February 1 of the following year.

## ***Information Dissemination Projects***

The Foundation encourages proposals that support innovative activities designed to disseminate and promote utilization of program results and to promote replication of successful strategies used to increase the recruitment, education, and retention in SMET education and career development of persons with disabilities. Audiences for Information Dissemination Activities include pre-college school counselors and science and mathematics teachers, college and university SMET faculty, and families of students with disabilities.

Activities to be supported include symposia, workshops, and the development of informational materials and media that (1) present information on techniques, instructional materials, technologies, and adaptations that promote full inclusion and participation in SMET curricula by students with disabilities, or (2) inform the scientific and educational communities and the general public of the potential in SMET of persons with disabilities.

Proposals for Information Dissemination Activities should include:

- a statement of the need, the intended outcomes, and the expected national and/or regional impact of the activity;
- a description of the activity and appropriate bibliographic references;
- names and qualifications of key personnel involved in the Dissemination Activity;
- estimates of the number of participants and their description; and
- Information about the location and probable date(s) of meetings (if applicable) and the method of announcement or invitation.

Grants are limited to \$100,000 per year for a maximum of two years. Budgets for workshops may include participant support for transportation, subsistence and other conference-related costs. Funds may be requested for the publication of proceedings. Support from other agencies or contributors should be identified.

## **Deadlines**

Brief, informal, preliminary proposals are required (please see page 3 for details). Prospective proposers who do not submit a preliminary proposal are not eligible to submit in the formal competition. Preliminary proposals have a deadline of November 2. Formal proposal packages must be received at NSF no later than February 1 of the following year.

## FOUNDATION-WIDE EFFORTS

The Foundation offers Facilitation Awards for Scientists and Engineers with Disabilities (FASED) to provide students and faculty with disabilities special equipment and services needed to reduce or remove barriers to participation in research and training activities supported by NSF. These activities encourage persons with disabilities to pursue careers in science and engineering by stimulating the development and demonstration of special equipment that facilitates their work performance.

Single copies of the announcement (NSF 91-54) describing FASED activities can be obtained at no cost from the NSF Publication Clearinghouse, P.O. Box 218, Jessup, MD 20794-0218 (301) 947-2722, or via Internet e-mail (pubs@nsf.gov), or by calling the PPD Program at (703) 306-1636.

Guidelines for proposal preparation and general information on proposal evaluation and grant administration are contained in the *Grant Proposal Guide* (NSF 98-2). Foundation programs are described in the *NSF Guide to Programs* (NSF 97-150) or the current year issue. These publications may also be obtained without cost from the NSF Publication Clearinghouse, or by accessing NSF's World Wide Web site at <http://www.nsf.gov>.

## PROPOSAL DEVELOPMENT and PROCESSING

### *Preliminary Proposals*

Brief, informal preliminary proposals should contain the following descriptions: (1) the need being addressed, and target audience; (2) major project goals; (3) project methodology; (4) brief outline of qualifications of project personnel; (5) evaluation plans; (6) dissemination plans; and (7) plans to institutionalize the project activities following the NSF funding period. In addition, please include a paragraph describing budgetary needs.

The preliminary proposal should have a maximum of five (5) single-spaced pages, and should **NOT** use the NSF standard cover page. Review of these preliminary proposals will provide an opportunity for NSF staff to determine proposal eligibility and to comment on the appropriateness of proposal content, focus, scope, and target population. Proposers are strongly encouraged to discuss proposed projects with the program officers of the Program for Persons with Disabilities prior to submission of preliminary proposals by calling (703) 306-1636. Proposers will be notified in writing within four weeks whether they are invited to submit a formal proposal. Prospective proposers who do not submit a preliminary proposal are not eligible to submit in the formal competition. Preliminary proposals have a deadline of November 2.

An original, with one copy, should be sent to:

Program for Persons with Disabilities  
DHRD, Room 815  
National Science Foundation  
4201 Wilson Blvd.  
Arlington, VA 22230

### *Formal Proposals*

#### **Narrative**

PPD proposers are encouraged to submit electronically using the NSF FastLane system for formal proposal submission and review, available through the World Wide Web (WWW) on the FastLane Home Page (<http://www.fastlane.nsf.gov>). Instructions for preparing and submitting via FastLane are located at (<http://www.fastlane.nsf.gov/al/newstan.htm>)

In order to use NSF FastLane, you must have the following software: Netscape 3.0 or above, or Microsoft Internet Explorer 4.0 or above; Adobe Acrobat Reader 2.0 or above for viewing PDF files; and Adobe Acrobat 3.X or Aladdin Ghost 5.10 or above for converting files to PDF.

To access FastLane, your institution must be registered; a list of these is located on the FastLane Home Page. To register, an authorized representative must complete the registration form; a PIN for individual staff is available from the sponsored projects office.

Proposals must be submitted no later than 5:00 PM (local time) on the deadline date, and a signed paper cover sheet mailed to arrive within five working days of the deadline to the PPD staff. For questions or problems, please send an e-mail message or call (703) 306-1142

The deadline for all formal proposals being submitted to the Program for Persons with Disabilities is February 1. Formal proposals should include the project description components as described below. Awards will be made by August 1.

Except as modified by the guidelines set forth in this document, standard NSF guidelines on proposal preparation, submission, evaluation, awards, declinations, and withdrawals contained in the *Grant Proposal Guide* (GPG) (NSF 98-2) are applicable. In particular, proposers should note that the Project Description is strictly limited to fifteen (15) pages; thirty (30) double-spaced pages are not acceptable. Appendices may be included but should not contain extraneous materials. Appendices should be limited to brief curriculum vitae and letters of commitment to document collaborative arrangements of significance described in the Project Description portion of the proposal. Proposers should be judicious in this regard as NSF leaves to individual reviewer discretion what part of the appendices, if any, should be read.

Where multiple organizations are involved, the proposal can be submitted by only one of them. It should describe clearly the role to be played by the other organizations, and should specify the managerial arrangements contemplated. If all or part of the project will be performed off-campus or away from organizational headquarters, a rationale should be provided.

The Project Description section for proposals submitted to the Program for Persons with Disabilities must include:

- goals and objectives;
- project design, including a demonstration of understanding of previous research and projects; anticipated impact of the project; planned products or publications; timeline for activities; and dissemination strategies;
- description of participant recruitment and selection;
- evaluation and assessment plan;
- qualifications of staff (and a list of advisory committee members, if applicable);
- description of participating organizations (and their responsibilities); letters of agreement must be included in the appendices;
- planned products or publications;
- discussion of the results of prior NSF support if received within the last five years (see page 7 of the GPG for further clarification).

Proposal review and processing normally takes six months.

## Budget

NSF has specific provisions regarding allowable costs for salaries and wages, indirect costs, fringe benefits, equipment purchases, participant support costs, tuition remission, consultant services, subawards, etc. In general, the projects and activities supported by the Program for Persons with Disabilities are subject to these provisions as stated in the *Grant Proposal Guide* (GPG) (NSF 98-2). Proposers must follow the stated provisions in preparing the budgets for these projects and activities. Note that:

- indirect costs will not be paid on participants costs, as per NSF policy; and

- funds should be included for the lead principal investigator to attend a two-day meeting in the Washington, DC Metropolitan area.

Proposers should follow institutional guidelines regarding per diem allowances or, in the absence of such policies, use the current Federal government daily rate.

For multi-year projects, a summary budget should be provided, as well as separate budgets for each year. In addition to these forms, up to three (3) pages of budget justification should be included. The need for each item should be explained clearly.

## SUBMISSION OF PROPOSALS

Proposals submitted to NSF must be prepared and submitted in accordance with the guidelines provided in the appropriate program solicitation or announcement and the general NSF guidelines in the GPG (NSF 98-2). Single copies of this brochure are available at no cost from the NSF Publication Clearing House (see page 3) or via Internet e-mail ([pubs@nsf.gov](mailto:pubs@nsf.gov)) or by accessing NSF's World Wide Web site at <http://www.nsf.gov>.

The program activity acronym (e.g., PPD) must be clearly listed on the mailing label and on the cover sheet.

**Ten (10) copies of EACH PROPOSAL, including one copy bearing original signatures, and a DISK with the text in ASCII TEXT FILE SHOULD be mailed to:**

ANNOUNCEMENT NO. NSF 98-144  
NATIONAL SCIENCE FOUNDATION  
PPU Room P60  
4201 Wilson Blvd.  
ARLINGTON, VA 22230

Put the program or activity acronym, if one is used, after the NSF announcement number without additional punctuation; for example:

ANNOUNCEMENT NO. NSF 98-144 PPD.

Proposals will be reviewed by experts selected from the SMET research and/or education community. Special efforts will be made to secure reviews from individuals with strong records of achievement in the proposed area. Final award determination will be made by program staff and will reflect both reviewer comments and program priorities.

The National Science Foundation (NSF) funds research and education in most fields of science and engineering. Grantees are wholly responsible for conducting their project activities and preparing the results for publication. Thus, the Foundation does not assume responsibility for such findings or their interpretation.

NSF welcomes proposals from all qualified scientists, engineers and educators. The Foundation strongly encourages women, minorities, and persons with disabilities to compete fully in its programs. In accordance with federal statutes, regulations, and NSF policies, no person on grounds of race, color, age, sex, national origin, or disability shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving financial assistance from NSF (unless otherwise specified in the eligibility requirements for a particular program).

*Facilitation Awards for Scientists and Engineers with Disabilities (FASSED)* provide funding for special assistance or equipment to enable persons with disabilities (investigators and other staff, including student research assistants) to work on NSF-supported projects. See the program announcement or contact the program coordinator at (703) 306-1636.

The National Science Foundation has Telephonic Device for the Deaf (TDD) and Federal Information Relay Service (FIRS) capabilities that enable individuals with hearing impairments to communicate with the Foundation regarding NSF programs, employment, or general information. TDD may be accessed at (703) 306-0090 or through FIRS on 1-800-877-8339.

#### PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

The information requested on proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the review process; to applicant institutions/grantees to provide or obtain data regarding the proposal review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers and educators as necessary to complete assigned work; to other government agencies needing information as part of the review process or in order to coordinate programs; and to another Federal agency, court or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See Systems of Records, NSF-50, "Principal Investigator/Proposal File and Associated Records," 63 Federal Register 267 (January 5, 1998), and NSF-51, "Reviewer/Proposal File and Associated Records," 63 Federal Register 268 (January 5, 1998). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing instructions. Send comments regarding this burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to: Reports Clearance Officer; Information Dissemination Branch, DAS; National Science Foundation; Arlington, VA 22230.

#### YEAR 2000 REMINDER

In accordance with Important Notice No. 120 dated June 27, 1997, Subject: Year 2000 Computer Problem, NSF awardees are reminded of their responsibility to take appropriate actions to ensure that the NSF activity being supported is not adversely affected by the Year 2000 problem. Potentially affected items include: computer systems, databases, and equipment. The National Science Foundation should be notified if an awardee concludes that the Year 2000 will have a significant impact on its ability to carry out an NSF funded activity. Information concerning Year 2000 activities can be found on the NSF web site at <http://www.nsf.gov/oirm/y2k/start.htm>.

**NATIONAL SCIENCE FOUNDATION**  
ARLINGTON, VA 22230

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